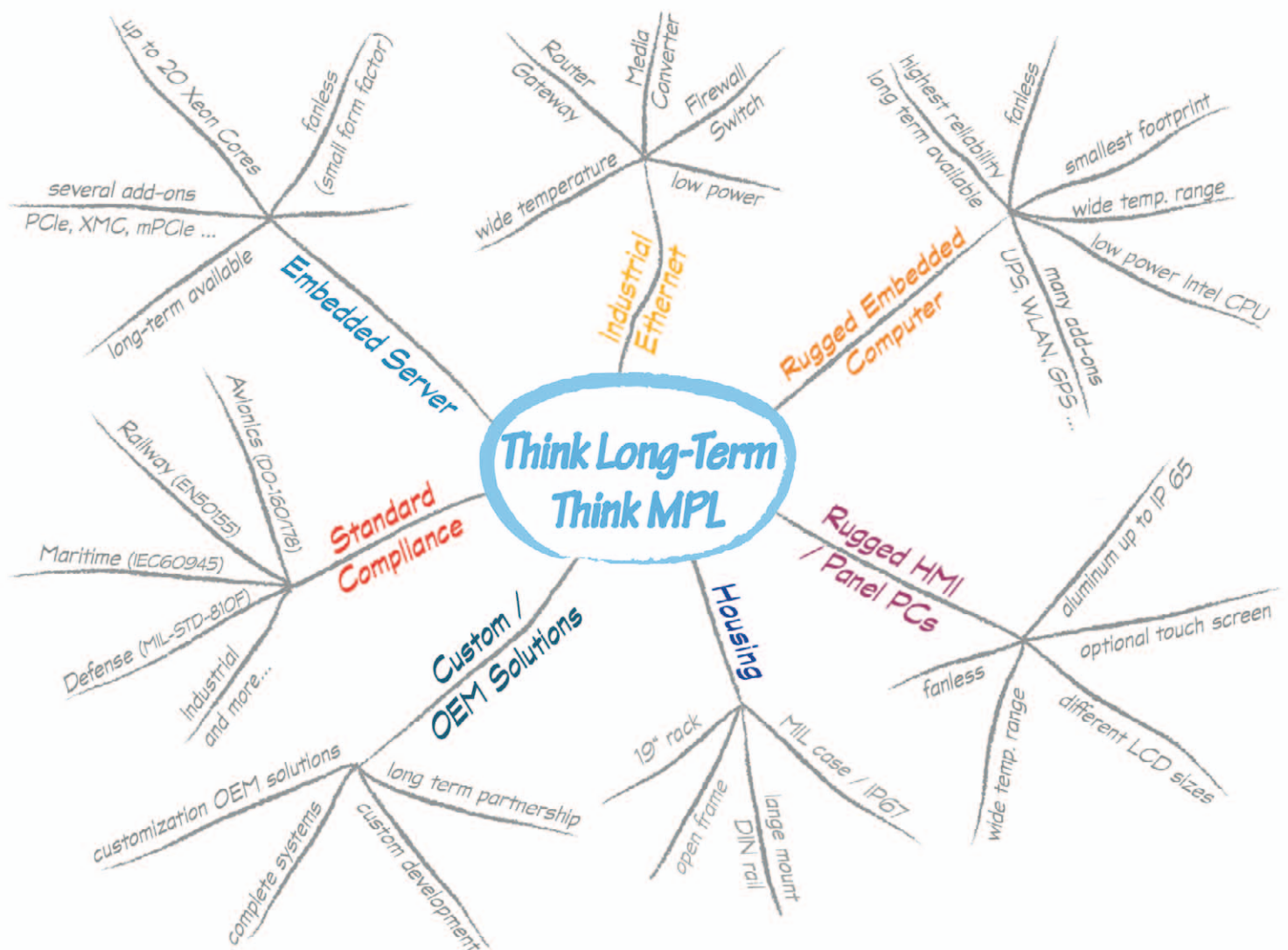


MPL Company Profile





We strive to be a valued partner in understanding your critical business issues. MPL then translates that knowledge into innovative products and solutions that enhance productivity, quality and security.

MPL AG Switzerland

MPL AG was founded in 1985. During our history, MPL has become the industry technology leader for low power, rugged, embedded, and extended temperature designs. MPL develops and manufactures highly integrated Industrial Computers, embedded CPU boards and systems for long term reliability and availability. Our products are being used worldwide in harsh industrial and military/aerospace environments. MPL is a privately owned company that has demonstrated continuous growth and profitability since 1985. Our commitment to customer service and the relationships we have developed are the most valued asset in our inventory. This is our guarantee of trust which allows our customers to work with us today and tomorrow.

High-Tech • Made in Switzerland

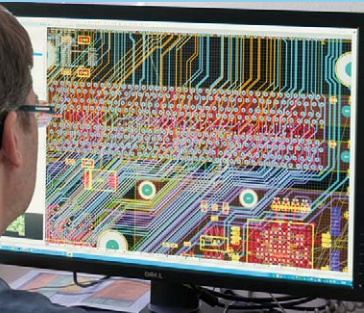
MPL stands for state-of-the-art microprocessor based solutions. We provide a complete service from conception and design through manufacturing and test. This includes long life cycle support for our high quality electronic modules and devices.

The Rugged Solution Provider

Our success is based on unique solutions – designed for rugged and sensitive environments such as: medical, maritime, railway, aerospace, food industry, defense, and industrial applications with high reliability requirements.



Members of the MPL engineering & support team



Inhouse multilayer rule driven Layout



BIOS & Software development



All MPL products are 100% designed and manufactured in Switzerland.



Quality and Reliability

The design and manufacturing of all MPL products are conducted in Switzerland – according to our philosophy “High-Tech • Made in Switzerland”. Quality and reliability are key priorities in the evaluation of components, design, production, and test. MPL is an ISO 9001 certified company since 1995.

Development and Engineering

We continuously invest in new and innovative technologies for our microprocessor based products. Our close partnerships with the world leaders in chip technologies guarantee state-of-the-art hardware and software solutions with long-term availability.

Life Cycle Support

To assure life cycle support, we stock all components in-house. This guarantees that we are prepared to repair all MPL products over their full operating life cycle.

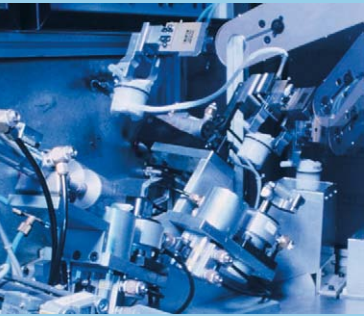
- 10+ years availability
- 20+ years repairable

MPL – The Company You Trust

REFERENCES

Worldwide, more than 600 companies are using our reliable products on a daily basis. Our applications are in use in industrial controls, medicine, military/aerospace, traffic, transport, and food service industries. A partial list of trusted MPL customers:

ABB
ALSTOM
AREVA
BAE SYSTEMS
BOEING
BOMBARDIER
BOSCH
CATERPILLAR
DLR
FOX-IT
GENERAL DYNAMIC
HONEYWELL
LOCKHEED MARTIN
MBDA
NASA
NORTHROP GRUMMAN
OTO MELARA
PILATUS
SAAB
STADLER RAIL
THALES
KMW
THYSSENKRUPPS
ZEISS
ETH ZÜRICH
KUDELSKI/ NAGRA
NAVAL
AIRBUS
KROHNE OIL & GAS



Rugged Embedded Computer for production environment



Rugged Embedded Computer for unmanned vehicles



*Embedded CPU board
Steady use of MPL products on ISS*

The real value of a product is when: It can be installed and forgotten. It is readily available over the years, and repairable when needed

CAPABILITIES

Reducing total cost of ownership

When designing products, our main target is the long-term availability of a given design. Therefore, the selection of the long-term available components is critical. Whenever possible, we use products from the embedded road maps of different suppliers, as this will assure the longterm availability of a given component. In addition, we keep all parts in stock, allowing us to repair the products years after delivery, and in most cases, beyond the End Of Life of a given design. This in-house stock also enables quick delivery when needed.

Increase MTBF values

One of the MPL design rules is to use components with the lowest possible power consumption. The selection of the proper parts is key, because reliable and energy-efficient products can only be developed with high quality components. A design just created to achieve a low price, cannot be the driving factor for best MTBF values. This design philosophy is what differentiates MPL from its competitors.

Operational from - 40°C up to + 85°C

The basic principle to achieve extended temperature in a product is to design it with lowest power consumption. Hence, with minimum thermal loss. Prior to delivery a complete thermal test cycle of every product is performed in MPL's environmental chamber. This insures full functionality for a given temperature range and provides additional assurance to our customers.



Weeding without Chemicals with MPL embedded computer solution



Our mission is reliability

Our products are being used in harsh environments including areas of shock and vibration. Therefore, we design and manufacture our boards and mechanics to exceed the requirements of defense, railways, traffic, avionics, space, marine and industrial applications. The right design makes the difference.

What is a real rugged design?

Designing products from scratch is the only solution. Simply taking the reference design created for commercial PCs, is not suitable. Many manufacturers of Industrial PCs take this approach and create inherently flawed designs, that cannot meet the specifications for harsh environments. Therefore MPL designs and manufactures its state-of-the-art computers and controller boards in Switzerland by implementing the latest thermal technologies and utilizing our many decades of experience in designing products for rugged market demands. This is what makes our products "Real Rugged" and tested to the highest reliability standards.

These are the principles which differentiate MPL in a fast moving market.



Rugged Embedded Computer for power station control system



Custom Design for storage & communication system in avionics



Rugged Embedded Computer with EN 50155



All MPL products are designed to withstand harsh and rugged environments. They are most reliable with a long-term availability to achieve the lowest possible cost of total ownership. All of our products are available in extended temperature and can be customized to specific requirements.

PRODUCT RANGE

Rugged Embedded Xeon Server Solutions (MXCS)

High performance, low power and highly integrated rugged Embedded Server, built in a special designed Aluminum housing, 19" rack or MIL IP67 housing with Intel Xeon CPU.

- Up to Intel XEON 16 cores
- mPCIe, PCIe, M.2 & graphics expansion
- Ethernet Ports
- Conductive cooling concept -20°C to +60°C
- Long-term availability guarantee
- Designed to meet or exceed the most standard like MIL-STD-810, EN50155, IEC 60945 and many more

Rugged Embedded Computers (PIP)

The name PIP stands for a compact, robust, low power, fanless, and ready to use embedded computer. It is available in a rugged housing (DIN-Rail or flange mount), up to IP67 enclosure, or as Open Frame.

- Up to Intel i7 Quad core
- Expandable PCI/104, PCIe/104, PMC, XMC, mPCIe, PCIe, PCI
- Low power SBC designs
- Extended temperature -40°C to +75/85°C
- Long-term availability guarantee
- Designed to meet or exceed the most standard like MIL-STD-810, EN50155, IEC 60945 and many more

Compact Embedded Computers (CEC)

Ultra compact, robust, fanless, and low power Embedded Computer Family. The systems are offered with long term availability guarantee and in a rugged housing with different mounting options. CEC units are available according your requirements.

- Up to Intel Atom Quad core
- Ultra compact embedded Box-PC without any wiring
- Extended temperature -40°C to +85°C
- Robust aluminum housings with Flange and DIN-Rail mounting
- Customized expansions capability over up to six mPCIe slots
- Long-term availability guarantee
- Designed to meet or exceed the most standard like MIL-STD-810, EN50155, IEC 60945 and many more



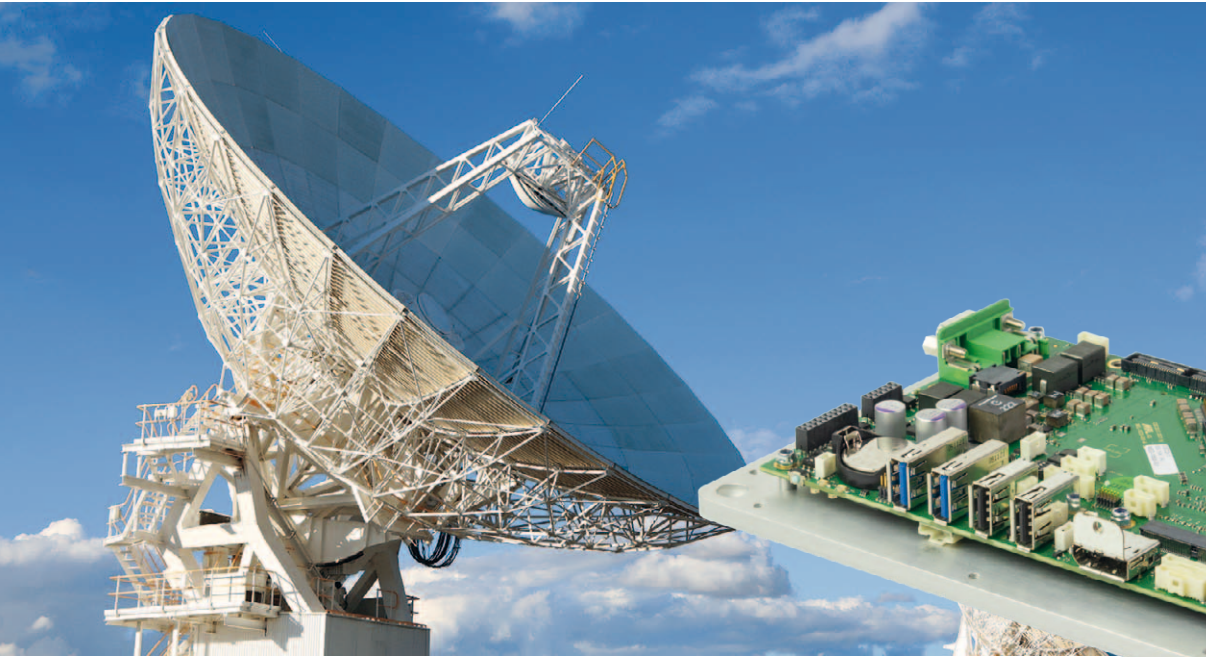
Industrial PC for offshore applications



Rugged Embedded Computer for data acquisition & communication



Industrial PC for power distribution monitoring



Industrial Network Solutions

Solutions for IP based industrial-grade networking (IoT, Industrial 4.0) with devices such as Firewalls, Routers, Switches, and Media converters. Like all other MPL products, they are designed to work in harsh environments with extreme temperature, humidity, and vibration.

- Robust, heavy duty products
- Temperature range from -40°C up to +85°C / fanless
- Customized design and functionality
- DIN-Rail, Flange, MIL housings and Open Frame
- Long-term availability guarantee
- Designed to meet or exceed the most standard like MIL-STD-810, EN50155, IEC 60945 and many more

Fanless embedded Panel Computer Solutions

MPL Panel Solutions are specifically designed for rugged and sensitive environments like medicine, maritime, defense, food industry, as well as any industrial application where high quality is required. As all other MPL products, MPL Panel Computers come without a fan, are flexible and expandable for basically all customer needs and requirements.

- 8", 15", 18", and 21" wide screen solutions
- Stainless steel or aluminum housings
- Up to IP65 / NEMA 4 protected versions
- Touch option for all versions available
- Wide range of CPU boards (Atom up to i7 QuadCore)

Rugged Embedded Open Frame CPU Boards

To allow to install the rugged embedded CPU board into custom or existing enclosures, we designed an Open Frame solution with a cooling concept.

- Low power designs
- Fanless solutions
- Intel architecture from single Core Atom up to 16 Core Xeon CPU
- Extended temperature range available
- Complete, flexible CPU board solutions with cooling concept
- Long-term availability guarantee

OEM and Customer specific Solutions

We have a broad technology base and a great deal of experience in microprocessor oriented development. MPL is a single, comprehensive source for hardware/software design, production, test, and support. In some cases the depopulation of a standard product is the best, most cost effective and quickest path to achieve a customer specific solution.



Industrial PC - data entry & acquisition and system on vehicles



Embedded CPU board Ultrasonic inspection robot control



Rugged Embedded Computer for maritime/marine application



WORLDWIDE DISTRIBUTOR AND SUPPORT NETWORK FROM MPL

Local sales support

Our distributors are near you! To serve our customers best, we have a worldwide distributor network which will handle your local pre and post sales support.

Technical support from the engineer

Our customers get direct access to our design engineers to assist with initial product function and operation. We do not work with call centers or large support teams, but we rather rely upon our prompt and courteous service, while giving customers direct access to our design engineers to resolve any support issues.

MPLcare

is provided to each customer free of charge and includes technical support questions answered in less than 24 hours by the design engineering team.

MPL – The Company You Can Trust



High-Tech • Made in Switzerland

MPL AG Elektronik-Unternehmen

Täferstrasse 20

CH-5405 Dättwil

Tel.: +41 56 483 34 34

Email: info@mpl.ch

www.mpl.ch